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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

WOODS, ERIC V

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/881,424

Applicant(s)

WITTENBRINK, CRAIG M.

Examiner

Eric Woods

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— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/23/2005 has been entered.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Response to Amendment

The affidavits filed on 23 November 2005 under 37 CFR 1.131 has been considered but is ineffective to overcome the Morein reference.

A. General discussion and summary of affidavits

See below. Although the present submission now contains the allegation that the invention was made in the US, a NAFTA country, or a WTO member country, it is still insufficient.

The evidence submitted is insufficient to establish a conception of the invention prior to the effective date of the Morein reference. While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See *Mergenthaler v. Scudder*, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897).

B. General review of legal standards for diligence and evidence

The evidence submitted is insufficient to establish diligence from a date prior to the date of reduction to practice of the Morein reference to either a constructive reduction to practice or an actual reduction to practice. While it has been held (*Ex parte Ovshinsky*, 10 USPQ2d 1075 (Bd. Pat. App. & Inter. 1989).) that all limitations need not be shown in the attached evidence, they must be explained in the affidavit / declaration itself (see MPEP 715.07 [R-3], section I), and in this case, they are not.

The standard applied here is taken from *Griffith v. Kanamaru*, 816 F.2d 624, 2 USPQ2d 1361 (Fed. Cir. 1987) The Court generally reviewed cases on excuses for inactivity including vacation extended by ill health and daily job demands, and held lack of university funding and personnel are not acceptable excuses. This kind of detailed evidence is in **NO MANNER** presented in this case.

Next, see *Anderson v. Crowther*, 152 USPQ 504, 512 (Bd. Pat. Inter. 1965), where it was held that preparation of routine periodic reports covering all accomplishments of the laboratory was insufficient to show diligence. *Wu v. Jucker*,

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167 USPQ 467, 472-73 (Bd. Pat. Inter. 1968) held that an applicant improperly allowed test data sheets to accumulate to a sufficient amount to justify interfering with equipment then in use on another project.

Note the discussion from MPEP 715.07(a) and various other court cases below.

What is meant by diligence is brought out in *Christie v. Seybold*, 1893 C.D. 515, 64 O.G. 1650 (6th Cir. 1893). In patent law, an inventor is either diligent at a given time or he is not diligent; there are no degrees of diligence. An applicant may be diligent within the meaning of the patent law when he or she is doing nothing, if his or her lack of activity is excused. Note, however, that the record must set forth an explanation or excuse for the inactivity; the USPTO or courts will not speculate on possible explanations for delay or inactivity. See *In re Nelson*, 420 F.2d 1079, 164 USPQ 458 (CCPA 1970).

While *Keizer v. Bradley*, 270 F.2d 396, 397, 123 USPQ 215, 216 (CCPA 1959)), held that diligence does not require that "an inventor or his attorney ... drop all other work and concentrate on the particular invention involved...." (*Emery v. Ronden*, 188 USPQ 264, 268 (Bd. Pat. Inter. 1974)), that is not the case here. See MPEP 2138.06(a).

Therefore, the above cases serve as guidelines for interpretation here.

The specific cases in question to determine **attorney** diligence are referenced in MPEP 2318.06 [R-1]. The specific cases cited therein show that six days is an acceptable time period for diligence (*Haskell v. Coleburne*, 671 F.2d 1362, 213 USPQ 192, 195 (CCPA 1982)). Examiner does not feel that *Haskell* controls in this case.

However, *Bey v. Kollonitsch*, 866 F.2d 1024, 231 USPQ 967 (Fed. Cir. 1986) is the other controlling case, which fits the standard more appropriately. To quote from that case, (231 USPQ 969): “Bey’s case for diligence hinged on whether his patent attorney, Ruth Hattan (Hattan) had been reasonably diligent in preparing and filing the patent application during the 41-day critical period...Bey presented evidence that Hattan worked on the applications from this group on almost every working date in the critical period. There was no evidence that priority was given to any applications docketed after the group of 22 applications ... In Strasbourg, she completed 16 of the patent applications, including the parent to the present application, and she mailed them from Strasbourg directly to the PTO.”

The case had one experienced attorney assigned to the case. Therefore, the attorney worked on related applications over that time period. Therefore, that establishes that reasonable diligence consists of working on an application “almost every working date”.

Further, that case establishes (970, section B): “Generally, the patent attorney **must show** that unrelated cases are taken up in chronological order, thus, that the attorney has the burden of keeping good records of the dates when cases are docketed as well as the dates when specific work is done on the applications.” Again, *Bey v. Kollonitsch* does not require that “the attorney should drop all other work and concentrate on the particular invention involved; and if the attorney has a reasonable backlog of work which he takes up in chronological order and carries out expeditiously,

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that is sufficient.” As noted immediately below on 970, the attorney must provide evidence and docket numbers to prove this particular point.

C. Analysis of Schuyler affidavit

First, the affidavit by Marc P. Schuyler will be analyzed for sufficiency. This is an affidavit by the attorney only, which can only serve to prove attorney diligence.

Although counsel can offer opinions (see item 5(c) on page 3) of whether or not the evidence is sufficient to prove probative, that opinion is simply attorney arguments and cannot be used in these proceedings (see *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) (“An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness.”) That holds true whether or not the arguments are made as part of an affidavit or not.

That being said, sections 1-5 are irrelevant to the question of attorney diligence and only constitute formal matters and/or counsel’s arguments.

The attorney states in the beginning of section 6 that he acted diligently from July 19, 2000, until filing of the patent application, therefore establishing a period over which diligence must be found.

Section (a) establishes that the attorney did not spend the majority of his time on patent prosecution, which if anything seems to militate towards a finding that that diligence was lacking since counsel did not spend the majority of his time in that arena.

Section (b) establishes that the attorney managed in-house counsel for patent prosecution and supervised external counsel in preparing and drafting patent applications. However, the attorney did personally draft a number of patent applications, thusly indicating that the attorney took a strong and personal interest in the prosecution of the instant application, since he worked on only around 10% (by his own admission) of new cases.

The statement that he worked on cases in substantially chronological order is uncorrelated by billing records, docket information, or any substantive evidence.

Section (c) shows that the practice at HP Labs during the period between July 19, 2000 and June 14, 2001, and prior, was to review disclosure documents on a '**somewhat quarterly**' basis for purposes of drafting new applications based upon them (emphasis added). This alone shows that the company did not have a **regular** practice of reviewing applications in the sense that is required to prove diligence (see above as an explanation of this).

Section (d) indicates that for whatever reason, review of the invention was slated for the March 2000 patent quarterly meeting, but the March meeting was "in most likelihood, canceled." Therefore, applicant provides **no evidence** that the meeting was canceled. Therefore, since it was not reviewed until June 2000 (as applicant admits), diligence is clearly lacking from the March 2000 – June 2000 period alone.

Section (e) fails to provide the corroborating evidence required in *Bey* as above, and merely alleges that it was docketed in due course. It alleges that the attorney began drafting the application in December 2000 (no specific dates or records provided,

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no billing records either). It further cites an email exchange with the inventor, but fails to provide copies of such emails or any corroborative evidence (again, see *Bey*). Also, applicant states that he dictated part of the application while on a drive between San Francisco and Los Angeles, but provides only a generic time period without specific dates.

Counsel **specifically** worked on this case personally, thusly indicating its importance to his company, since he headed the patent prosecution group. However, no evidence as to diligent prosecution is presented to support the gaps in the affidavit.

Section (f) states that the work on this case continuous. However, there is no corroborative evidence of that, and there is no evidence that the attorney worked on related cases (the determining and ultimately decisive factor) in the interim gaps. There is a massive gap between late December 2000 and April 9, 2001. The final draft was apparently not reviewed by the company until the May 2001 patent coordination meeting. Also, there is a major gap between April 9, 2001 and May 2001 patent coordination meeting. Finally, no evidence of diligence is provided between that meeting and the filing of the application with the Patent Office on June 14, 2001, which again fails the required diligence standard established by *Bey*, where the attorney mailed the revised applications directly from the worksite where inventors had been interviewed.

Therefore, because of all the gaps in the record, the lack of corroborative evidence, and the lack of specific dates, billing records, or evidence generally, the examiner finds the affidavit fails to meet the required standards and fails to demonstrate

diligence. In this case, sufficiency of affidavits was key to making such a determination, as in *Bey*. The examiner finds the affidavit legally insufficient and not probative by a 'preponderance of the evidence' standard.

D. Brief Analysis of Wittenbrink affidavit

Next, the sufficiency of the Wittenbrink affidavit will be evaluated briefly, since the attorney affidavit has been shown to be insufficient. First of all, as stated above, the applicant has not provided any evidence of applicant diligence, as required by *Griffith* and *Anderson* as above.

Sections 1-5 are formalities and do not bear onto the requirements of 1.131 per se. A written description does not constitute an actual reduction to practice. Furthermore, only the filing of a US patent application that complies with the disclosure requirement of 35 USC § 112 constitutes a constructive reduction to practice. A written description, no matter how complete, does not qualify as an actual reduction to practice. Therefore, at best the evidence supplied shows a conception. However, since there are various portions of the evidence, only the portions that have explained are analyzed.

The cited information does purport to disclose pseudocode that would perform the claimed method. It merely offers a vague assertion that such an item was created and that a simulation worked to that effect. Further, in order for such evidence to be accepted (even if it were present) applicant would have to provide enough detail such that examiner could determine:

- Which of the claim limitations are satisfied by the prototype (or the allegedly sufficient

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written description)

-What test conditions were used and if they represented actual conditions or realistically simulated ones

-And whether or not the test results demonstrated that the test was successful and reproducible. (See MPEP 608.01(p), subsection II - "Simulated or Predicted test results" and biomedical applications must show specific test data to prove the suitability and safety of a compound for a particular purpose (see MPEP 2105, section III for example) to establish utility.

No such test data was received or included.

Specifically, *Scott v. Finney* (CA FC) 32 USPQ2d 1115, held: "A certain amount of "common sense" must be applied in determining the extent of testing required. Depending on its nature, the invention may be tested under actual conditions of use, or may be tested under "bench" or laboratory conditions which fully duplicate each and every condition of actual use, or in some cases, maybe be tested under laboratory conditions which do not duplicate all of the conditions of actual use."

In sections (d) and (e) and in this case, only the allegation that such a simulation was performed is included, and not test data or the details of test conditions are provided. Next, only pseudocode is provided. In other cases where software has been at issue, applicants have provided source code from the requisite source code repositories and other hard evidence showing a working implementation. The details from the lab notebook and the other documents only could at best be taken to show evidence of conception. There is no evidence of an **actual reduction to practice**.

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Secondly, no source code was provided, only broad assertions that tests took place and that the tested material worked in some manner better than an unknown benchmark. No analyses of those test results or any explanation of anything related to them was provided.

The evidence submitted is insufficient to establish diligence from a date prior to the date of reduction to practice of the Morein reference to either a constructive reduction to practice or an actual reduction to practice. Applicant has not shown sufficiently that diligence was practiced between the time periods asserted. The lack and dearth of evidence detailing applicant's actions over that time simply does not meet the required legal tests. There is no assertion that applicant worked between November 1999 and the date that the disclosure document was submitted to refine the invention.

Next, there is simply no evidence of diligence by the Griffith and Anderson standards above. Since applicant has not actually reduced the invention to practice, it is insufficient.

The evidence submitted is insufficient to establish diligence from a date prior to the date of reduction to practice of the Morein reference to either a constructive reduction to practice or an actual reduction to practice. While it has been held (*Ex parte* Ovshinsky, 10 USPQ2d 1075 (Bd. Pat. App. & Inter. 1989).) that all limitations need not be shown in the attached evidence, they must be explained in the affidavit / declaration itself (see MPEP 715.07 [R-3], section I), and in this case, they are not. Most claim limitations are not mentioned, and they are not matched, clause for clause, with specific item and page numbers in the accompanying evidence as examiner has previously

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stated is required.

Finally, an actual reduction to practice cannot have occurred without corroborating evidence, and there is only the evidence of the inventor, no more documentation. If this were an actual interference instituted under 35 USC 102(g) with the owners of the Morein reference, corroboration would clearly have been required, but in this case applicant has treated this proceeding during prosecution as if it required a different standard of proof. Examiner has repeatedly told counsel in this case that the standard of proof required would be similar to that required in proceedings under 35 USC 102(g), because it is extremely likely that this case will provoke an interference for various reasons, since the independent claims are subject to rejection under 35 USC 102, and there is another application filed within the six-month window. One way or another, either by the assignee of the instant application or the owner of the patent in question, whether by provocation under 35 USC 102(g) and/or litigation, it is likely that an interference will be instituted and/or ordered by remand. Therefore, examiner will not and cannot require or use a lesser standard of evidence in these proceedings than that which a court would require. The examiner must in these circumstances serve as a trier of fact and use those standards.

E. Conclusion

The affidavits are insufficient for the above reasons. Applicant has not established an actual reduction to practice, and has repeatedly failed to show diligence. Prosecution is hereby closed; this constitutes a Final Action in the sense of prosecution

before the Office.

Response to Arguments

Applicant's arguments, see Remarks pages 1-2, filed 27 December 2004, with respect to the rejection(s) of claim(s) 1-22 under 35 U.S.C. 103(a) have been fully considered and are **NOT** persuasive. The filed affidavits under Rule 1.131 are insufficient. See above.

Therefore, the rejections of claims 1-22 under 35 U.S.C. 103(a) have been **NOT** been withdrawn.

This proceeding is final, and no reconsideration will be made or given. Applicant has had several opportunities to correct the deficiencies in the affidavits and has failed to do so. Applicant's representative was informed of these deficiencies during an interview and chose not to file a supplemental response and/or new affidavits. No amendments after final, whether arguments or other evidence, will be entered by the Office, since the failure to correct known deficiencies does **NOT** constitute "good and sufficient reason" to enter evidence after the close of prosecution.

Applicant needs to file a Notice of Appeal. If applicant wishes to invoke 37 CFR 1.181, applicant needs to be mindful of the time limit imposed by 37 CFR 1.181(f), which **cannot** be extended. In any case, such action would not serve to delay prosecution or stay proceedings otherwise with respect to the application.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 4-12, and 14-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Morein, U.S. Patent No. 6,670,955.

With regard to claim 1, Morein describes a first storage (Fig. 1, Color Buffer 116); a fragment buffer that holds multiple fragments for overlapping data (Fig. 1, Fragment Buffer 106); and one of instructions and hardware that causes said device to detect in the fragment buffer a fragment representing predetermined one of closest and furthest visible data for the pixel location (col. 5, lines 41-48 and col. 6, lines 1-3), blend the predetermined one with any preexisting contents of the first storage that represent data that is to be visible in an output image (Fig. 3, step 322), and repeat the detecting and blending until no more unprocessed fragments representing visible image data are left in the fragment buffer for the pixel location (Fig. 3, step 328); wherein detection of the

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predetermined one is performed using a Z-value storage to isolate during a first pass through the fragment buffer a Z-value corresponding to the predetermined one (col. 5, line 66 to col. 6, line 5), and to match during a second pass through the fragment buffer contents of the Z-value storage against fragment buffer contents to isolate the predetermined one (col. 6, lines 6-22).

With regard to claim 2, Morein describes first, detecting any fragment representing a closest opaque data, moving such fragment to the first storage to overwrite any prior contents (col. 5, lines 30-45) and removing such fragment from further consideration as fragment buffer contents (Fig. 3, step 326); second, examining depth of fragments in the fragment buffer relative to any closest opaque data and removing from further consideration any fragments obscured by closest opaque data (col. 5, lines 49-56); and third, compositing any fragments for the pixel location remaining in the fragment buffer with contents of the pixel value storage in back-to-front order (Fig. 3, step 322).

With regard to claim 4, Morein describes the fragment buffer stores fragments that collectively representing multiple pixel locations (col. 4, lines 18-30 and col. 5, lines 45-47); the pixel value storage (Fig. 1, Color Buffer 116) is part of a frame buffer, the frame buffer having at least one first storage location for each pixel within an image region (Fig. 1, Frame Buffer 104, and col. 4, lines 37-41); and said device further comprises one instructions and hardware that composites data by successively examining fragments in the fragment buffer and by combining those fragments into the frame buffer as the predetermined one for the corresponding pixel location (Fig. 3, step

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322) or returning them to the fragment buffer if they are not the predetermined one (Fig. 3, step 324), and by repeating the combining or returning until the fragment buffer is completely empty (Fig. 3, step 328).

With regard to claim 5, Morein describes first, detecting any fragment representing a closest opaque object, moving such fragment to the first storage and removing such fragment from further consideration as fragment buffer contents (col. 5, lines 30-45 and Fig. 3, step 326); second, examining depth of fragments in the fragment buffer relative to any closest opaque image object and removing from further consideration any fragments representing data obscured by a closest opaque object (col. 5, lines 46-56); and third, compositing any fragments remaining in the fragment buffer corresponding to the particular pixel location with contents the first storage in back-to-front order (Fig. 3, step 322).

With regard to claim 6, Morein describes wherein said the fragment buffer is a first-in, first out memory (col. 3, lines 51-53) and wherein said device examines successive fragments in the fragment buffer and either composites those fragments if they represent furthest visible data for a pixel location (Fig. 3, step 322), or returns those fragments to the fragment buffer if they do not represent furthest visible data a pixel location (Fig. 3, step 324), and performs the compositing or returning until the fragment buffer is completely empty (Fig. 3, step 328).

With regard to claim 7, Morein describes a state generation unit (Fig. 1, circuit 100) that produces state information to indicate at least: a state that there is a fragment for to the pixel location representing relatively closer opaque data than other fragments

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in the fragment buffer which have not yet been invalidated (col. 5, lines 41-48); and a state that there are at least two fragments each representing visible data for a corresponding pixel location (col. 6, lines 6-15).

With regard to claim 8, Morein describes the first storage is part of a frame buffer (Fig. 1, Frame Buffer 104) having a unique address space for each pixel location, the unique address space for each pixel location adapted to store color and intensity information as well as state information for the pixel location (col. 4, lines 58-61).

With regard to claim 9, Morein describes the Z-value storage (Fig. 1, Z-buffer 118) and the pixel value buffer (Color Buffer 116) are part of a frame buffer (Frame Buffer 104); said device further comprises a second Z-value storage (Fig. 2, Z-function logic 202); and the Z-value storage of the frame buffer and the second Z-value storage are used in alternating fashion in a manner where one Z-value storage holds a Z-value for fragment representing a predetermined one of closest and furthest visible data for a particular pixel location that will be moved and removed from the fragment buffer during a current pass through the fragment buffer (Fig. 1, Z-buffer 118 and col. 5, lines 41-45 and col. 5, line 66 to col. 6, line 5), while the other Z-value storage is used to sort Z-values for other fragments for the particular pixel location that will be moved and removed during a subsequent pass through the fragment buffer (col. 5, lines 49-65).

With regard to claim 10, Morein describes detecting a fragment representing transparent data for a pixel location (Fig. 3, step 304); storing a depth value of a detected fragment in a Z-value storage if the depth value for the fragment indicates data for the fragment is relative closer to the desired viewing perspective than data for

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previously detected fragments (col. 5, lines 41-48); using the stored depth value to identify the fragment representing closest remaining visible data for the pixel location (col. 5, lines 49-56), compositing the fragment with contents of the pixel value storage for that particular pixel location (Fig. 3, step 322), and inhibiting further consideration of such detected fragment from further consideration as fragment buffer contents (Fig. 3, step 326); and repeating the processing of contents of the fragment buffer until no more fragments are left for consideration in the fragment buffer for the particular pixel location (Fig. 3, step 328). Obviously, Morein further would teach that such fragment would be transparent or at least potentially so in order to be present, which covers the amended limitation.

With regard to claim 11, Morein describes storing in the fragment buffer multiple fragments representing data overlapping in at least one pixel location (col. 4, lines 18-30 and col. 5, lines 45-47); using the hardware logic to index, detect and remove from the fragment buffer fragment representing a predetermined one of closest and furthest visible image data at the pixel location (col. 5, lines 41-48 and col. 6, lines 1-3, and Fig. 3, step 326); combining that predetermined one with any preexisting pixel value storage contents that represents visible data (Fig. 3, step 322); and repeating the using and combining until no more fragments are left in the fragment buffer that correspond the pixel location (Fig. 3, step 328).

With regard to claim 12, Morein describes first, detecting any fragment representing closest opaque data, moving such fragment to the pixel value storage to overwrite any prior contents and removing such fragment from further consideration as

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fragment buffer contents (col. 5, lines 30-45 and Fig. 3, step 326); second, examining depth of fragments in the fragment buffer relative any closest opaque image data and removing from further consideration any fragments that are obscured by closest opaque data (col. 5, lines 49-56); and third, compositing the fragment buffer any fragments remaining in with contents of the pixel value storage in back-to-front order (Fig. 3, step 322).

With regard to claim 14, Morein describes generating state information indicating at least a state that there is opaque data for the pixel location relatively closer than other data represented by fragment buffer fragments which have not yet been invalidated (col. 5, lines 41-48), and a state that there are at least two fragments representing visible data for the pixel location; and using the state information for the pixel location to process fragments in a manner dependent upon the state information (col. 6, lines 6-22).

With regard to claim 15, Morein describes detecting a fragment representing transparent data for a pixel location (Fig. 3, step 304); storing a depth value associated with a detected fragment in a Z-value storage if the depth value indicates that data for the detected fragment is relatively closer to the desired viewing perspective than data for previously detected fragments (col. 5, lines 41-48); using the stored depth value to determine the closest transparent data at the particular pixel location (col. 5, lines 49-56), compositing the fragment representing closest transparent data with contents of the pixel value storage for that pixel location (Fig. 3, step 322), and inhibiting further consideration of such detected fragment from further consideration as fragment buffer

contents (Fig. 3, step 326); and repeating the processing of contents of the fragment buffer until no more fragments are left for consideration in the fragment buffer for the particular pixel location (Fig. 3, step 328).

With regard to claim 16, Morein describes the repeating is performed on a fragment-by-fragment basis for fragments in the fragment buffer (Fig. 3, step 328), with fragments not constituting the predetermined one being returned to the fragment buffer (Fig. 3, step 324) in first-in, first out format (col. 3, lines 51-53), until no more fragments are left in the fragment buffer (Fig. 3, step 328).

With regard to claim 17, Morein describes first, identifying and storing a first fragment in a first buffer (Fig. 1, Render Backend Block 114 and col. 5, lines 1-4), with remaining fragments representing overlapping visible data being stored in a second buffer (Fig. 1, Fragment Buffer 106), where the first fragment represents a predetermined one of closest and furthest visible data from a desired viewing perspective (col. 5, lines 41-48 and col. 6, lines 1-3); second, generating an index that permits retrieval of the first fragment with respect to fragments in the second buffer for the particular pixel location, and storing the index in a third buffer (Fig. 1, Z-buffer 118 and col. 6, lines 6-15); and third, using the contents of the third buffer to identify and remove a fragment from the second buffer in dependence upon depth, and blending the removed fragment with contents of the first buffer (Fig. 3, step 322 and step 326).

With regard to claim 18, Morein describes the first buffer is part of a frame buffer and the frame buffer includes a pixel value storage unique to the particular pixel location (Fig. 1, color buffer 116, which is part of Frame Buffer 104); the second buffer is a

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fragment buffer that collectively holds fragments for multiple pixel locations (Fig. 1, Fragment Buffer 106); and the third buffer is a Z-value storage corresponding to the particular pixel location (Fig. 1, Z-buffer 118).

With regard to claim 19, Morein describes placing multiple fragments into a fragment buffer (Fig. 3, step 304); polling fragment buffer contents to identify a predetermined one of maximum and minimum Z-value for fragments for the particular pixel location (col. 5, lines 41-48 and col. 6, lines 1-3); moving the identified fragment to a frame buffer, combining that fragment with any preexisting contents that are to be visible in an output image (Fig. 3, step 322), and removing the identified fragment from further consideration as fragment buffer contents (Fig. 3, step 326); and repeating the polling and moving until no further fragments are left for the particular pixel location (Fig. 3, step 328).

With regard to claim 20, Morein describes storing fragments corresponding to many pixel locations, all collectively in the fragment buffer (col. 4, lines 18-30 and col. 5, lines 45-47); returning fragments not corresponding the predetermined one into fragment buffer for later-consideration as a predetermined one (Fig. 3, step 324); and performing the repeating until no fragments are left in the fragment buffer (Fig. 3, step 328).

With regard to claim 21, Morein describes compositing fragments for overlapping visible data in back-to-front manner, by first, polling the fragment buffer to identify any fragment representing closest opaque data for the particular pixel location and moving such fragment to a frame buffer (col. 5, lines 30-45), second, culling fragments

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obscured by the closest opaque data (Fig. 3, step 308), and third, identifying and compositing with contents of the frame buffer each fragment remaining the fragment buffer representing furthest data for the particular pixel location (Fig. 3, step 322).

With regard to claim 22, Morein describes means for identifying and storing any fragment representing closest opaque data (Fig. 3, step 302) or furthest transparent fragment if there is no closest opaque data (Fig. 3, step 316); and means for successively detecting and blending with the stored fragment in order of greatest depth each remaining fragment representing furthest unprocessed unobscured visible data (Fig. 3, step 322).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morein, U.S. Patent No. 6,670,055, in view of Schilling, "A New Simple and Efficient Antialiasing with Subpixel Masks".

With regard to claim 3, Morein is relied upon for describing each fragment for the pixel location, as discussed in the 102 rejections above. Morein fails to explicitly describe a sub-pixel mask and wherein said device further comprises one of instructions stored and hardware associated with the device that implements antialiasing using the sub-pixel mask to blend visual contributions by each fragment representing visible data

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in dependence upon the associated mask, as further recited in claim 3. However, Schilling teaches the further recited limitations of claim 3 (see Schilling, page 1, Abstract and Introduction).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Morein to incorporate the antialiasing with subpixel mask algorithm of Schilling because the use of a subpixel mask for antialiasing purposes is very common and well known, and has several advantages compared with other antialiasing techniques, including easy computation and preservation of spatial information. Motivation for such a combination may be found, for example, in Schilling, page 1, as taught in the Introduction section).

With regard to claim 13, Morein is relied upon for describing each fragment for the pixel location, as discussed in the 102 rejections above. Morein fails to explicitly describe a sub-pixel mask and wherein said method further comprises performing antialiasing using the sub-pixel mask to blend visual contributions by each fragment for the pixel location in a manner responsive to values of each mask, as further recited in claim 13. However, Schilling teaches the further recited limitations of claim 13 (see Schilling, page 1, Abstract and Introduction).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Morein to incorporate the antialiasing with subpixel mask algorithm of Schilling because the use of a subpixel mask for antialiasing purposes is very common and well known, and has several advantages compared with other antialiasing techniques, including easy computation and preservation of spatial

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information. Motivation for such a combination may be found, for example, in Schilling, page 1, as taught in the Introduction section).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is apprised of the following art – US 6,252,608 B1 to Snyder in view of US 6,697,063 B1 to Zhu. Applicant is further put on notice that should the previous rejections be traversed in some manner, those references will be used as the first of several rejections of the instant claims under 35 U.S.C. 103(a).

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Woods whose telephone number is 571-272-7775. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Woods

February 14, 2006


ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER